IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please CANCEL claims 31 and 32, AMEND claims 1, 18 and 33-36 and ADD claim 37 in accordance with the following:

1. (currently amended) An optical amplifier for amplifying wavelength division multiplexed signal light which has respective optical signals of a first wavelength band of a ~~C band~~C-band containing a plurality of optical signals with several wavelengths different from each other and a second wavelength band of a ~~L band~~L-band containing a plurality of optical signals with several wavelengths different from the wavelengths of the optical signals contained in the first wavelength band, comprising:

a C-band optical ~~amplifying means amplifying pump~~ amplifier to amplify optical signals in the C-band with ~~light in the first wavelength band using a rare earth element doped fiber to which~~ excitation light ~~is supplied~~; ~~and~~

an L-band optical amplifier to amplify optical signals in the L-band with excitation light, the L-band optical amplifier being provided in a parallel arrangement with the C-band optical amplifier; and

~~at least one parallel amplifying means that supplies residual pump light to provide Raman amplification in the second wavelength band that is different from the first wavelength band~~a Raman amplification unit provided in series with the C-band optical amplifier and the L-band optical amplifier, on a pre-stage side, to produce Raman amplification with residual excitation light output from the parallel arrangement of the C-band optical amplifier.

2. (previously amended) An optical amplifier according to claim 1,

wherein there is provided demultiplexing means demultiplexing said wavelength division multiplexed signal light into respective optical signals of a first wavelength band and a second wavelength band, and multiplexing means multiplexing respective optical signals of the first wavelength band and the second wavelength band which have been demultiplexed by said demultiplexing means,

said optical amplifying means has a first amplifying section amplifying optical signals of the first wavelength band which have been demultiplexed by said demultiplexing means, and a second amplifying section amplifying optical signals of the second wavelength band which have

been demultiplexed by said demultiplexing means, and

said optical amplifying means supplying via said demultiplexing means a part of said excitation light used in said first amplifying section to said Raman amplification producing medium, so that optical signals of the second wavelength band which have been Raman amplified by said Raman amplification producing medium, are input via said demultiplexing means to said second optical amplifying section.

3. (original) An optical amplifier according to claim 2, wherein when said first wavelength band is a 1550nm band and said second wavelength band is a 1580nm band, a wavelength of the excitation light used in said first optical amplifying section contains a 1480nm band.

4. (previously amended) An optical amplifier according to claim 3, wherein said first optical amplifying section comprises an erbium doped fiber, at least one excitation light source generating excitation light of a 1480nm band, and an optical coupler supplying excitation light generated by said excitation light source to said erbium doped fiber from a rear side, wherein a part of said excitation light is passed through said erbium doped fiber and said demultiplexing means and supplied to said Raman amplification producing medium.

5. (previously amended) An optical amplifier according to claim 1, wherein there is provided demultiplexing means demultiplexing said wavelength division multiplexed signal light into respective optical signals of a first wavelength band and a second wavelength band, and multiplexing means multiplexing respective optical signals of the first wavelength band and the second wavelength band which have been demultiplexed by said demultiplexing means,

said optical amplifying means has a pre-stage amplifying section collectively amplifying said wavelength division multiplexed signal light input to said demultiplexing means, and a second optical amplifying section amplifying only optical signals of the second wavelength band which have been demultiplexed by said demultiplexing means, and

said optical amplifying means supplying a part of said excitation light used in a part of said pre-stage optical amplifying section to said Raman amplification producing medium, wavelength division multiplexed signal light which contains optical signals of said second wavelength band which have been Raman amplified by said Raman amplification producing medium are input to said pre-stage optical amplifying section.

6. (original) An optical amplifier according to claim 5, wherein when said first wavelength band is a 1550nm band and said second wavelength band is a 1580nm band, a wavelength of the excitation light used in said pre-stage optical amplifying section contains a 1480nm band.

7. (previously amended) An optical amplifier according to claim 6, wherein said pre-stage optical amplifying section comprises an erbium doped fiber, at least one excitation light source generating excitation light of a 1480nm band, and an optical coupler supplying excitation light generated by said excitation light source to said erbium doped fiber from a rear side, wherein a part of said excitation light is passed through said erbium doped fiber and supplied to said Raman amplification producing medium.

8. (original) An optical amplifier according to claim 1, wherein said Raman amplification producing medium is an optical fiber which is designed so that a non-linear effective cross section is small compared to a 1.3μm zero dispersion single mode fiber.

9. (previously amended) An optical amplifier according to claim 1, wherein said external transmission path is of a hybrid transmission path formed by connecting a positive dispersion fiber having a positive wavelength dispersion value and a positive dispersion slope with respect to a signal light wavelength band, and a negative dispersion fiber having a negative wavelength dispersion value and a negative dispersion slope with respect to the signal light wavelength band, wherein one end on the side of said negative dispersion fiber is arranged at an input side of said optical amplifying means and functions as said Raman amplification producing medium.

10. (previously amended) An optical amplifier according to claim 1, wherein there is provided optical power constant control means monitoring an output power of said wavelength division multiplexed signal light, and controlling an excitation light driving condition of said optical amplifying means so that said output power becomes constant.

11. (previously amended) An optical amplifier according to claim 1, wherein there is provided gain constant control means monitoring a gain in said optical amplifying means, and controlling an excitation light driving condition of said optical amplifying means so that said gain becomes constant.

12. (previously amended) An optical amplifier according to claim 1, wherein there is provided supervisory control means processing a supervisory control signal transmitted together with said wavelength division multiplexed signal light.

13. (cancelled)

14. (previously amended) An optical amplifier according to claim 5 comprising:

first power monitor means monitoring the optical signal power of the first wavelength band which has been demultiplexed by said demultiplexing means;

second power monitor means monitoring the optical signal power of the second wavelength band which has been amplified by said second optical amplifying section; and

optical power deviation control means controlling the operation of at least one of said pre-stage optical amplifying section and said second optical amplifying section in response to the respective monitor results of the first and second power monitor means, so that the optical power deviation for the first and the second wavelength bands becomes constant.

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (currently amended) An optical amplifier for amplifying wavelength division multiplexed signal light which has respective optical signals of a first wavelength band of a ~~C band~~C-band containing a plurality of optical signals with several wavelengths different from each other and a second wavelength band of an ~~L band~~L-band containing a plurality of optical signals with several wavelengths different from the wavelengths of the optical signals contained in the first wavelength band, comprising:

~~an~~ a C-band optical ~~amplifying unit~~amplifier to ~~amplifying~~amplify ~~pump light in the first wavelength band using a rare earth element doped fiber to which~~ optical signals in the C-band with excitation light ~~is supplied~~; ~~and~~

~~at least one parallel~~an L-band optical ~~amplifying unit~~amplifier to amplify optical signals in the L-band with excitation light, the L-band optical amplifier being provided in a parallel arrangement with the C-band optical amplifier~~, in parallel with the optical amplifying unit,~~ that

~~amplifies the band and supplies residual pump light to provide Raman amplification in the second wavelength band that is different from the first wavelength band~~; and

a Raman amplification unit provided in series with the C-band optical amplifier and the L-band optical amplifier, at a post-stage side, to produce Raman amplification with residual excitation light from the parallel arrangement of the C-band optical amplifier.

19. (original) An optical amplifier according to claim 18,

wherein there is provided a demultiplexing unit demultiplexing said wavelength division multiplexed signal light into respective optical signals of a first wavelength band and a second wavelength band, and a multiplexing unit multiplexing respective optical signals of the first wavelength band and the second wavelength band which have been demultiplexed by said demultiplexing unit,

said optical amplifying unit has a first amplifying section amplifying optical signals of the first wavelength band which have been demultiplexed by said demultiplexing unit, and a second amplifying section amplifying optical signals of the second wavelength band which have been demultiplexed by said demultiplexing unit, and

said optical amplifying unit supplying via said demultiplexing unit a part of said excitation light used in said first amplifying section to said Raman amplification producing medium, so that optical signals of the second wavelength band which have been Raman amplified by said Raman amplification producing medium, are input via said demultiplexing unit to said second optical amplifying section.

20. (original) An optical amplifier according to claim 19, wherein when said first wavelength band is a 1550nm band and said second wavelength band is a 1580nm band, a wavelength of the excitation light used in said first optical amplifying section contains a 1480nm band.

21. (original) An optical amplifier according to claim 20, wherein said first optical amplifying section comprises an erbium doped fiber, at least one excitation light source generating excitation light of a 1480nm band, and an optical coupler supplying excitation light generated by said excitation light source to said erbium doped fiber from a rear side, wherein a part of said excitation light is passed through said erbium doped fiber and said demultiplexing unit and supplied to said Raman amplification producing medium.

22. (original) An optical amplifier according to claim 18, wherein there is provided a

demultiplexing unit demultiplexing said wavelength division multiplexed signal light into respective optical signals of a first wavelength band and a second wavelength band, and a multiplexing unit multiplexing respective optical signals of the first wavelength band and the second wavelength band which have been demultiplexed by said demultiplexing unit,

said optical amplifying unit has a pre-stage amplifying section collectively amplifying said wavelength division multiplexed signal light input to said demultiplexing unit, and a second optical amplifying section amplifying only optical signals of the second wavelength band which have been demultiplexed by said demultiplexing unit, and

said optical amplifying unit supplying a part of said excitation light used in a part of said pre-stage optical amplifying section to said Raman amplification producing medium, wavelength division multiplexed signal light which contains optical signals of said second wavelength band which have been Raman amplified by said Raman amplification producing medium are input to said pre-stage optical amplifying section.

23. (original) An optical amplifier according to claim 22, wherein when said first wavelength band is a 1550nm band and said second wavelength band is a 1580nm band, a wavelength of the excitation light used in said pre-stage optical amplifying section contains a 1480nm band.

24. (original) An optical amplifier according to claim 23, wherein said pre-stage optical amplifying section comprises:

an erbium doped fiber;

at least one excitation light source generating excitation light of a 1480nm band; and

an optical coupler supplying excitation light generated by said excitation light source to said erbium doped fiber from a rear side, wherein a part of said excitation light is passed through said erbium doped fiber and supplied to said Raman amplification producing medium.

25. (original) An optical amplifier according to claim 18, wherein said Raman amplification producing medium is an optical fiber which is designed so that a non-linear effective cross section is small compared to a 1.3μm zero dispersion single mode fiber.

26. (original) An optical amplifier according to claim 18, wherein said external transmission path is of a hybrid transmission path formed by connecting a positive dispersion fiber having a positive wavelength dispersion value and a positive dispersion slope with respect

to a signal light wavelength band, and a negative dispersion fiber having a negative wavelength dispersion value and a negative dispersion slope with respect to the signal light wavelength band, wherein one end on the side of said negative dispersion fiber is arranged at an input side of said optical amplifying unit and functions as said Raman amplification producing medium.

27. (original) An optical amplifier according to claim 18, wherein there is provided an optical power constant control unit monitoring an output power of said wavelength division multiplexed signal light, and controlling an excitation light driving condition of said optical amplifying unit so that said output power becomes constant.

28. (original) An optical amplifier according to claim 18, wherein there is provided a gain constant control unit monitoring a gain in said optical amplifying unit, and controlling an excitation light driving condition of said optical amplifying unit so that said gain becomes constant.

29. (original) An optical amplifier according to claim 18, wherein there is provided a supervisory control unit processing a supervisory control signal transmitted together with said wavelength division multiplexed signal light.

30. (original) An optical amplifier according to claim 22, further comprising:

a first power monitor unit monitoring the optical signal power of the first wavelength band which has been demultiplexed by said demultiplexing unit;

a second power monitor unit monitoring the optical signal power of the second wavelength band which has been amplified by said second optical amplifying section; and

an optical power deviation control unit controlling the operation of at least one of said pre-stage optical amplifying section and said second optical amplifying section in response to the respective monitor results of the first and second power monitor unit, so that the optical power deviation for the first and the second wavelength bands becomes constant.

31. (cancelled)

32. (cancelled)

33. (currently amended) An optical amplifier, comprising:

~~an optical amplifying unit~~ a C-band optical amplifier to amplify C-band optical signals of wavelength division multiplexed signal light ~~which has respective optical signals of a first wavelength band of a C band containing a plurality of optical signals with several wavelengths different from each other to provide amplified C band signals~~, the C-band optical signals being amplified with excitation light, the C-band optical amplifier outputting residual excitation light; ~~and~~

~~at least one parallel amplifying unit~~an L-band optical amplifier in parallel with the C-band optical amplifier, to amplify ~~a second~~ L-band optical signals of the wavelength division multiplexed light, the ~~band of a L band containing a plurality of optical signals with several wavelengths different from the wavelengths of the optical signals contained in the first wavelength band, producing a Raman amplification with respect to the optical signals of said second wavelength band to provide amplified L band~~L-band optical signals being amplified with excitation light; ~~and~~

a C/L ratio control section, controlling a balance between the amplified ~~C band~~C-band optical signals and the amplified ~~L band~~L-band optical signals; and

a Raman amplification unit provided in series with the C-band optical amplifier and the L-band optical amplifier, to produce Raman amplification for the optical signals in the L-band with the residual excitation light.

34. (currently amended) An optical amplifier receiving optical signals of a first wavelength band of a ~~C band~~C-band and a second separate wavelength band of an ~~L band~~L-band, wherein each wavelength band contains a plurality of optical signals of different wavelengths, said amplifier comprising:

a band demultiplexer providing a ~~first~~ C-band optical signal output and ~~a second~~ L-band optical signal output;

a first ~~amplifier~~amplifying unit~~to provide pump light of the first band output~~ amplifying the C-band optical signal output using a rare earth element doped fiber to which excitation light is supplied;

a ~~parallel~~ second amplifying unit, ~~to provide Raman amplification of residual pump light of the second band output~~arranged in parallel with the first amplifying unit, amplifying the L-band optical signal output;

a band multiplexer ~~combining the pump light~~multiplexing respective optical signals of the ~~first~~ C-band ~~output~~ and ~~Raman amplified residual pump light of~~ the ~~second~~ L-band ~~output~~which have been demultiplexed by said band demultiplexer; ~~and~~

a Raman amplifying unit provided in series with the first amplifying unit and the second

amplifying unit, on a pre-stage side, to produce Raman amplification for the optical signals in the L-band with residual excitation light output from the first amplifying unit via the band demultiplexer; and

a C/L ratio control section, controlling a balance between a ~~first~~ C-band optical signal power ~~of the pump light of the first band output~~ and ~~a second~~ an L-band optical signal power ~~of the Raman amplified residual pump light of the second band output~~.

35. (currently amended) An optical amplifying system receiving optical signals of a first wavelength band of a ~~C band~~C-band and a second separate wavelength band of an ~~L band~~L-band, wherein each wavelength band contains a plurality of optical signals of different wavelengths, said system comprising:

~~an~~ a first optical amplifier selectively amplifying the optical signals of the first wavelength band;

a second optical amplifier, arranged in parallel with the first optical amplifier, selectively amplifying the optical signals of the second wavelength band;

a Raman amplifier~~, arranged in parallel~~ provided in series with the ~~optical~~ first optical amplifier~~,~~ and the second optical amplifier, ~~selectively amplifying the optical signals of the second wavelength band~~on a pre-stage side, to produce Raman amplification for the optical signals in the L-band with residual excitation light output from the first amplifier; and

a C/L ratio control section, controlling a balance between ~~a first~~ the power of amplified C-band optical signals ~~power of the amplified optical signals of the first wavelength band~~ and ~~a second~~ L-band optical signals ~~power of the Raman amplified optical signals of the second wavelength band~~.

36. (currently amended) An optical amplifier comprising:

a multi-band amplification section having first and second sides, comprising:

a C-band optical amplifier to amplify optical signals in a C-band with excitation light; and

an L-band optical amplifier to amplify optical signals in an L-band with excitation light, the L-band optical amplifier being provided in parallel with the C-band optical amplifier, the multi-band amplification section outputting residual excitation light from at least the first side thereof; and

a ~~Ramen~~ Raman amplification unit provided in series with the multi-band amplification section, at the first side of the multi-band amplification section, to produce ~~Ramen~~ Raman

amplification for the optical signals in the L-band with the residual excitation light output from the multi-band amplification section.

37. (new) An optical amplifier system for amplifying a wavelength division multiplexed signal light which contains respective optical signals of a first wavelength band and a second wavelength band, comprising:

a demultiplexer for demultiplexing the wavelength division multiplexed signal light into said first wavelength band and said second wavelength band;

a plurality of optical amplifiers for amplifying said first wavelength band and said second wavelength band from the demultiplexer using a rare earth element doped fiber to which excitation light is supplied;

wherein excitation light passes through one of the optical amplifiers and the demultipleer and provides Raman amplification on a pre-state of the demultiplexer.